

# PATENT COOPERATION TREATY

## PCT

**10 / 583632**

### INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY (Chapter I of the Patent Cooperation Treaty)

(PCT Rule 44bis)

Applicant's or agent's file reference XNAN-1035231	<b>FOR FURTHER ACTION</b>		See item 4 below
International application No. PCT/US2004/042421	International filing date ( <i>day/month/year</i> ) 17 December 2004 (17.12.2004)	Priority date ( <i>day/month/year</i> ) 20 December 2003 (20.12.2003)	
International Patent Classification (8th edition unless older edition indicated) See relevant information in Form PCT/ISA/237			
Applicant SEBASTIAN, Jeffrey			

1.	This international preliminary report on patentability (Chapter I) is issued by the International Bureau on behalf of the International Searching Authority under Rule 44 bis.1(a).																
2.	This REPORT consists of a total of 4 sheets, including this cover sheet.  In the attached sheets, any reference to the written opinion of the International Searching Authority should be read as a reference to the international preliminary report on patentability (Chapter I) instead.																
3.	<p>This report contains indications relating to the following items:</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 15%;"><input checked="" type="checkbox"/> Box No. I</td> <td>Basis of the report</td> </tr> <tr> <td><input type="checkbox"/> Box No. II</td> <td>Priority</td> </tr> <tr> <td><input type="checkbox"/> Box No. III</td> <td>Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</td> </tr> <tr> <td><input type="checkbox"/> Box No. IV</td> <td>Lack of unity of invention</td> </tr> <tr> <td><input checked="" type="checkbox"/> Box No. V</td> <td>Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</td> </tr> <tr> <td><input type="checkbox"/> Box No. VI</td> <td>Certain documents cited</td> </tr> <tr> <td><input type="checkbox"/> Box No. VII</td> <td>Certain defects in the international application</td> </tr> <tr> <td><input type="checkbox"/> Box No. VIII</td> <td>Certain observations on the international application</td> </tr> </table>	<input checked="" type="checkbox"/> Box No. I	Basis of the report	<input type="checkbox"/> Box No. II	Priority	<input type="checkbox"/> Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability	<input type="checkbox"/> Box No. IV	Lack of unity of invention	<input checked="" type="checkbox"/> Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement	<input type="checkbox"/> Box No. VI	Certain documents cited	<input type="checkbox"/> Box No. VII	Certain defects in the international application	<input type="checkbox"/> Box No. VIII	Certain observations on the international application
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<input type="checkbox"/> Box No. VIII	Certain observations on the international application																
4.	The International Bureau will communicate this report to designated Offices in accordance with Rules 44bis.3(c) and 93bis.1 but not, except where the applicant makes an express request under Article 23(2), before the expiration of 30 months from the priority date (Rule 44bis .2).																

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland  Facsimile No. +41 22 740 14 35	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="padding: 2px;">Date of issuance of this report 20 June 2006 (20.06.2006)</td> </tr> <tr> <td style="padding: 2px;">Authorized officer  Simin Baharlou</td> </tr> <tr> <td style="padding: 2px;">Telephone No. +41 22 338 71 30</td> </tr> </table>	Date of issuance of this report 20 June 2006 (20.06.2006)	Authorized officer  Simin Baharlou	Telephone No. +41 22 338 71 30
Date of issuance of this report 20 June 2006 (20.06.2006)				
Authorized officer  Simin Baharlou				
Telephone No. +41 22 338 71 30				

# PATENT COOPERATION TREATY

From the  
INTERNATIONAL SEARCHING AUTHORITY

To:  
SUSAN B. FULLER  
BURNS DOANE SWECKER & MATHIS LLP  
402 WEST BROADWAY, SUITE 400  
SAN DIEGO, CA 92101

PCT

REC'D 11 JUL 2005

WIPO

PCT

## WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

Date of mailing  
(day/month/year) 07 JUL 2005

Applicant's or agent's file reference

034110-002

FOR FURTHER ACTION

See paragraph 2 below

International application No.

PCT/US04/42421

International filing date (day/month/year)

17 December 2004 (17.12.2004)

Priority date (day/month/year)

20 December 2003 (20.12.2003)

International Patent Classification (IPC) or both national classification and IPC

IPC(7): A61K 45/00 and US Cl.: 435/404; 424/85.1

Applicant

JEFFREY SEBASTIAN

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

### 2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/ US

Mail Stop PCT, Attn: ISA/US  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, Virginia 22313-1450

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Authorized officer

Leon Lankford

Telephone No. 571-272-1600

**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

PCT/US04/42421

**Box No. I Basis of this opinion**

1. With regard to the language, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

- ☐ This opinion has been established on the basis of a translation from the original language into the following language \_\_\_\_\_, which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).

2. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:

a. type of material

- ☐ a sequence listing  
☐ table(s) related to the sequence listing

b. format of material

- ☐ in written format  
☐ in computer readable form

c. time of filing/furnishing

- ☐ contained in international application as filed.  
☐ filed together with the international application in computer readable form.  
☐ furnished subsequently to this Authority for the purposes of search.

3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

4. Additional comments:

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

International application No.  
PCT/US04/42421

Box No. V Reasoned statement under Rule 43 bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims <u>1-11</u>	YES
	Claims <u>NONE</u>	NO
Inventive step (IS)	Claims <u>NONE</u>	YES
	Claims <u>1-11</u>	NO
Industrial applicability (IA)	Claims <u>1-11</u>	YES
	Claims <u>NONE</u>	NO

2. Citations and explanations:

Claims 1-11 lack an inventive step under PCT Article 33(3) as being obvious over Naughton et al. Naughton teaches cell conditioned media which is formulated to use topically. The reference doesn't teach a combination of fibroblast conditioned media and ES cell conditioned medium but does teach their application separately. As the reference generally teaches the applicability of cell conditioned media, it would have been obvious to combine two of the exemplified with a reasonable expectation that the combination would be topically effective therefor the claimed invention lacks an inventive step.

Claims 1-11 meet the criteria set out in PCT Article 33(4), and thus have industrial applicability because the subject matter claimed can be made or used in industry.

10 / 583632

PATENT

IN THE INTERNATIONAL BUREAU OF WIPO

In Re Application of

SEBASTIAN, Jeffrey et al.

No. PCT/US04/42421

Entitled: UTILIZATION OF STEM CELL  
AND FIBROBLAST COMBINED  
PRODUCTS AND NUTRIENTS IN  
TOPICAL COMPOSITIONS

Our Ref. 034110-002

Date: 17 December 2004

Priority Date: 20 December 2003

Re: Article 19 Amendment

VIA FACSIMILE  
011.41.22.338.89.70

I hereby certify that this communication is being sent via facsimile to the International Bureau of WIPO to 011.41.22.338.89.70 on 8 September 2005.

*Jose R. Lopez, Jr.*  
Jose R. Lopez, Jr.

International Bureau of WIPO  
34 chemin des Colombettes  
1211 Geneva 20  
Switzerland

Dir Sirs:

In reply to the International Search Report and Written Opinion (the "Opinion") mailed 7 July, 2005, Applicants respectfully request reconsideration of this Opinion in view of the remarks and amendments presented.

Support for Amendment

As amended herein, Claim 1 now recites conditioned stem cell culture medium, conditioned fibroblast cell culture medium "wherein said conditioned fibroblast cell culture medium is combined with said conditioned stem cell culture medium." Support for this additional language can be found at page 10, paragraph [[0032] of PCT WO2005/062791.

Review of Examiner's Statements

This Amendment is submitted in response to the Opinion. In the Opinion, the Examiner states that Claims 1-11 lack an inventive step under PCT Article 33(3) as being obvious over *Naughton et al.* (United States Patent No. 6,372,494). The Examiner alleges that *Naughton et al.* teaches cell conditioned media that is formulated to use topically. The Examiner further states that the reference does not teach a combination of fibroblast conditioned media and embryonic stem (ES) cell conditioned medium but does teach their application separately. The Examiner explains that since the reference generally teaches the applicability of cell conditioned media, it would have been obvious to combine two of the exemplified embodiments with a reasonable expectation that the combination would be topically effective. Therefore, the Examiner believes that the invention lacks an inventive step.

Description of Naughton et al.

*Naughton et al.* teaches a product having a conditioned cell culture medium composition. The composition is generated by combining cells of a specific cell medium to produce a conditioned cell culture medium which is then combined with a pharmaceutically acceptable carrier such as proteins and other metabolites. This conditioned cell culture medium composition may be used in a plurality of states including powder, solid or liquid. The medium in *Naughton et al.* is formulated with a pharmaceutically acceptable carrier as a vehicle for internal administration or may be applied directly to a food item or product. Additionally, the medium in *Naughton et al.* may be further processed to concentrate or reduce one or more factors or components contained within the medium.

Applicant's Invention

In contrast, Applicant's invention relates to a composition for use as a topical skin care product having an exemplary embodiment that comprises conditioned stem cell culture medium and a conditioned fibroblast cell culture medium wherein the conditioned fibroblast cell culture medium is combined with the conditioned stem cell culture medium as recited in Claim 1 of the present invention.

Applicant's Positions

*Naughton et al.* does not teach or suggest the combination of conditioned stem cell culture medium and fibroblast cell culture medium as required by Claim 1 of the present invention. On the contrary, *Naughton et al.* simply describes a stem cell culture medium that may be used in a plurality of compositions and that may be conditioned or spent to develop certain cell culture needs. Additionally, *Naughton et al.* simply describes a fibroblast cell culture medium that may be cultured three-dimensionally in a cell culture medium to meet the needs required to grow the cells in vitro. However, *Naughton et al.* does not teach or suggest the combination of conditioned stem cell culture and conditioned fibroblast cell culture medium for use in topical skin care products.

Further, no information was provided by the Examiner as to why one having ordinary skill in the art would have been led to modify *Naughton et al.* to create Applicant's invention. The fact that elements, even distinguishing elements, are disclosed in the art individually is usually insufficient as a basis for a rejection based on obviousness. It is common to find individual elements somewhere in the art, either in the same art or in a combination of arts. However, this does not necessarily obviate the invention as a whole. A teaching, suggestion, or incentive must exist between the individual elements to render the combination of Applicant's inventions obvious.

\* \* \* \*

CONCLUSION

Based on the foregoing, Applicants respectfully request reconsideration of the opinion that Claims 1-11 lack an inventive step under PCT Article 33(3) as being obvious over *Naughton et al.*

The Examiner is invited to call the undersigned agent if there are any questions.

Respectfully submitted,

Dated: September 8, 2005

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Laurie A. Axford  
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Enclosures — Replacement Claim  
Marked Claim  
Complete set of Claims

CLAIMS

1. A composition for use as a topical skin care product comprising:

- a) a conditioned stem cell culture medium;
- b) a conditioned fibroblast cell culture medium; and
- c) a delivery vehicle adapted for topical administration;

wherein said conditioned fibroblast cell culture medium is combined with said conditioned stem cell culture medium.



### CLAIMS

#### Amendments to the Claims

1. A composition for use as a topical skin care product comprising:
  - a) a conditioned stem cell culture medium;
  - b) a conditioned fibroblast cell culture medium; and
  - c) a delivery vehicle adapted for topical administration;

wherein said conditioned fibroblast cell culture medium is combined with said conditioned stem cell culture medium.

CLAIMS  
(As Amended Hrcin)

1. A composition for use as a topical skin care product comprising:
  - a) a conditioned stem cell culture medium;
  - b) a conditioned fibroblast cell culture medium; and
  - c) a delivery vehicle adapted for topical administration;wherein said conditioned fibroblast cell culture medium is combined with said conditioned stem cell culture medium.
2. The composition of Claim 1, wherein the stem cells are embryonic stem cells.
3. The composition of Claim 1, wherein the conditioned stem cell culture medium contains only products from stem cells and wherein the conditioned fibroblast cell culture medium contains only products from fibroblast cells.
4. The composition of Claim 1 produced by a process of culturing stem cells on a fibroblast feeder layer.
5. The composition of Claim 1 in a form selected from the group consisting of a solid, a lyophilizate, a powder, a gel, and a film.
6. The composition of Claim produced by a process of culturing stem cells and fibroblast cells in a three-dimensional cell culture.
7. The composition of Claim 1 produced by a process comprising the steps of:
  - a) culturing stem cells and fibroblasts separately;
  - b) removing the conditioned cell culture medium from each; and
  - c) combining the conditioned cell culture medium from (b) together with a delivery vehicle adapted for topical administration.
8. The composition of Claim 1 produced by a process comprising the steps of:
  - a) culturing stem cells in a conditioned fibroblasts cell medium to form a conditioned stem cell culture medium comprising products of both stem cells and fibroblasts;
  - b) removing the conditioned stem cell culture medium; and
  - c) combining the conditioned cell culture medium from (b) together with a delivery vehicle adapted for topical administration.

9. The composition of Claim 1, wherein said cultured fibroblast cells are human fibroblast cells.

10. The composition of Claim 1, wherein said cultured stem cells are human embryonic stem cells.

11. The composition of Claim 1, wherein said cultured stem cells and said cultured fibroblast cells are genetically modified.